



# SEONGJUN JANG

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## Education

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2017                      **KyungHee University**  
~ 2021                      B.Eng. in Industrial & Management Systems Engineering  
                                    B.Eng. in Software Convergence (Convergence Leader Track)

- Scholarship : Full-tuition for full semesters (Admission Scholarship)
- GPA : 3.82 / 4.5

### Study Abroad

- : Intensive Engineering Program – **The University of Auckland** in New Zealand (2020)
- : Short-Term Overseas Program – **UCSI University** in Malaysia (2017)

## Research Interests

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Specialized in **Optimization, Statistics, Data Science, Machine Learning**

Interested in **Music Information Retrieval**

## Research Experience

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**Computer Vision Lab @ Korea University (MAR 2021 - JUN 2021)**

Advisor : Prof. Sangpil Kim (Department of Artificial Intelligence, Korea Univ.)

## Paper Experience

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**Data Augmentation Techniques for Effective Learning of Event-Based Data - 2020**

- Link : ([github.com/junnei/EST](https://github.com/junnei/EST))
- Skills : Python, Pytorch
- Goal : Improving model performance with novel data augmentation techniques
- Details
  - Outperforms when applied to Yolo-v3(Image-like), Asynet(Event Histogram)

**Demand Prediction and Location theory depending on the diffusion of Fuel-Cell Electric Vehicle and Hydrogen Station – 2019**

- Link : ([github.com/junnei/Paper\\_Hydro](https://github.com/junnei/Paper_Hydro))
- Skills : Python, CPLEX, Tableau, React Native
- Goal : Predicting the diffusion of FCEV, finding the best locations for stations
- Details
  - Compare ours with government roadmaps
  - made navigation app for finding hydrogen station

## Recently Project Experience

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### Future Signal Prediction of Dynamic Vision Sensor – 2021

- Skills : Python, Pytorch
- Goal : Prediction future signal of event-based camera(dynamic vision sensor)
- Details
  - Outperforms the SOTA model in Video Prediction : PhyDNet
  - Architecture - transformer-based model

### Model Sparsity benefits with Data Sparsity – 2021

- Skills : Python, Pytorch
- Goal : Finding benefits of deep learning model sparsity when data is sparse.
- Details
  - Research transformer architecture

### AI Song Contest – 2021

- Link : (<https://www.aisongcontest.com/participants/rubatolab-2021>)
- Skills : Python, Pytorch, Tensorflow
- Goal : Making Music with AI
- Details
  - Participate as a team (Rubato Lab @ MODULABS)
  - Compose a bass line with Music GPT2, and a drum with LSTM VAE

### High Dynamic Range Object Detection Using Event-based Camera – 2020

- Link : ([github.com/junnei/ECOD](https://github.com/junnei/ECOD))
- Skills : Python, Pytorch
- Goal : Enables event-based data for object detection models
- Details
  - Convert sensor data to image to use object detection model : YOLOv3

### Oulim : Web-based Remote Learning Platform – 2020

- Link : ([oulim.pinkjelly.cat](https://oulim.pinkjelly.cat))
- Skills : JavaScript, React, Node.js
- Goal : Building a learning platform to help disabled people
- Details
  - Real-time voice recognition for subtitling system in class
  - Disability-friendly such as sign language translation and high contrast

### Seemly : Psychological test-based matching chat service – 2020

- Link : ([github.com/junnei/Seemly](https://github.com/junnei/Seemly))
- Skills : Dart, Flutter, Firebase
- Goal : Enables event-based data for object detection models
- Details
  - Convert sensor data to image to use object detection model : YOLOv3

### Harmony : Psychological test-based matching chat service – 2020

- Link : ([github.com/junnei/harmony](https://github.com/junnei/harmony))

- Skills : Dart, Flutter, Firebase

#### **Dyslexia Diagnostic App Service – 2020**

- Skills : Python, Pytorch, JavaScript, React Native, NCloud API

#### **Benefit-based integrated automatic payment service – 2019**

- Link : ([github.com/junnei/sol\\_app](https://github.com/junnei/sol_app))
- Skills : JavaScript, React Native, Sihnnhan API
- Goal : Enables automatic payment with the most beneficial card
- Details
  - Get a **excellence prize** with Payment App in **Shinhan-Hackathon 2019**

#### **Speech recognition model based seq2seq – 2019**

- Skills : Python, Pytorch, NSML
- Temporarily first place in Naver AI Hackathon

#### **SNS Service to share travel records – 2019**

- Skills : React Native, JavaScript

#### **web service for abandoned dog support – 2019**

- Link : ([mong.kr](http://mong.kr))
- Skills : AWS, Django, PostgreSQL

#### **Black-and-white Picture Coloring model based U-Net – 2018**

- Skills : Python, Tensorflow, Colab

#### **Pre-order Service for Take-out – 2018**

- Skills : React Native, mongoDB
- Goal : Enables self-employed people to provide pre-order service for take-out
- Details
  - **First prize** in **KyungHee Startup Contest**
  - **Innovation award** in **Yongin Startup Contest**
  - Start-up company receives **70 million won** in support

#### **Flight Ticket Reservation Service – 2018**

- Skills : HTML, PHP, JavaScript, mysql

#### **Folder and File Management System – 2018**

- Skills : C++

#### **Music Management and Playback Services – 2018**

- Skills : C++

#### **Auto-watered Flower Pot with Light for growth – 2018**

- Skills : Maya, Arduino, Embedded C
- Details
  - **First prize** by track in **Kyung-Hee Valley Program**